



# NORDEN TECHLAB

( O P C ) P r i v a t e L i m i t e d



## NABL Accredited

Laboratory of Material Testing

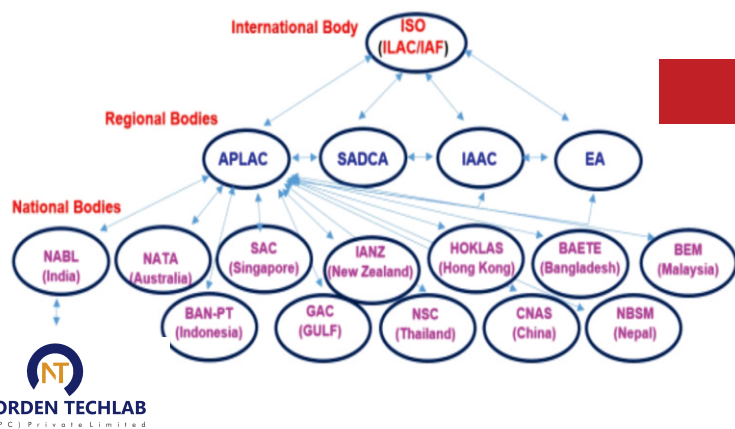
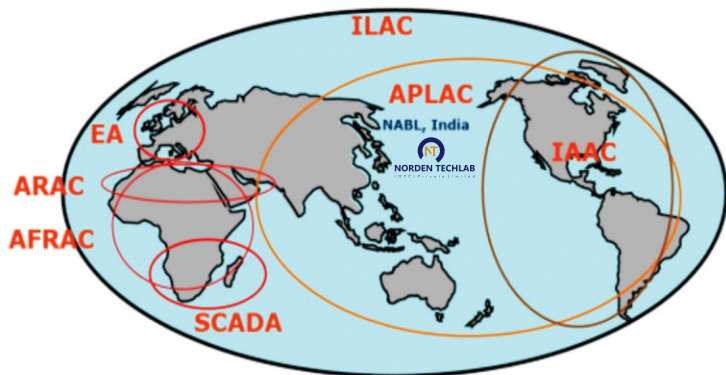
Compliance with ISO 17025: 2017

Certificate No. : TC-16885



## WHO GOVERNS US?

### ACCREDITATION



## House of metal testing laboratory

### ABOUT US

Founded in 2019, Norden Techlab (NT) has been operating successfully in the field of material testing. Initially launched as a proprietorship, the company continues to thrive under this structure.

The CEO oversees all operations of the testing laboratory, which functions as a core department of NT. Our lab is staffed with experienced and qualified engineers, and we have a dedicated marketing team for handling sales activities.

### OUR VISION



Our vision is to become the preferred global partner in the field of testing and validation by supporting our clients in delivering exceptional products, services, and solutions.

## Testing Ranges

### Tensile Testing

Products include ferrous and non-ferrous alloys such as steel, stainless steel, cast iron, copper, aluminum, brass, nickel, and titanium, available in forms like sheets, plates, wires, round bars, shapes, tubes, and pipes.

Tensile testing is a mechanical method used to assess a material's strength and ductility. It involves applying force to a sample until it fractures, revealing important mechanical properties of the material.

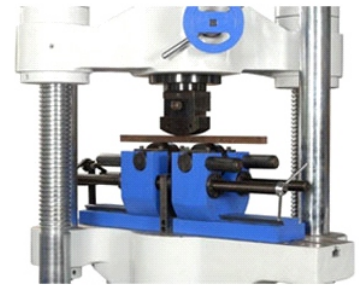
Specific Test Performed	Test Method
Tensile Strength	IS 1608-Part 1
Yield Strength	ISO 6892 - 1
Proof Strength (0.2 % & 1% )	ISO 4136
% Elongation	ASTM A 370
% Reduction of Area	ASTM E8/E8M
	ASTM B 557M
	ASTM B557
	AWS B 4.0
	ASME Sec – IX
	AWS D1.1 / D1.1M



## Bend Test

The bend test, or flexural test, evaluates a material's ductility and its resistance to fracturing under bending stress.

Specific Test Performed	Test Method
Bend Test	IS 1599 ISO 7438 ISO 5173 ASTM E290 ASTM A370 ASTM E190 ASME SEC IX AWS D1.1 / D1.1M



## Hot Tensile - Elevated Temperature Tensile Test

Temperature Range: 50 to 900°C  
These mechanical properties help describe how metals behave under stress, particularly regarding their strength and ductility.

Understanding how metal properties change with temperature is crucial for their application in various industries.

To examine how metals respond to elevated temperatures, tensile tests are conducted across a range of high-temperature conditions.

Specific Test Performed	Test Method
Tensile Strength	IS 1608-Part 2 ISO 6892 - 2 ASTM E 21
Yield Strength	
Proof Strength (0.2 % & 1% )	
% Elongation	
% Reduction of Area	



## Charpy Impact Testing

The Charpy impact test is a standardized method used to determine the amount of energy a material can absorb during fracture.

Specific Test Performed	Test Method
Charpy Impact Test (25°C to -196 °C)	IS 1757 (Pt-1) ISO 148-1 ASTM A 370 ASTM E23 ASTM 923 Method B



## Hardness - Rockwell / Brinell / Vickers / Portable

Hardness testing evaluates a material's resistance to indentation and assigns a numerical value representing its hardness.

- The Vickers test uses a diamond-shaped pyramid to make an indentation on the material surface for measurement.
- The Brinell method is ideal for coarse or rough-surfaced materials, using a carbide ball to create an indentation.
- The Rockwell test involves using a dedicated machine to measure hardness through depth of penetration.

Specific Test Performed	Test Method
Rockwell Hardness Test	IS 1586 (Pt-1) ISO 6508- 1 ASTM E18 ASTM A 370
Vickers Hardness Test	IS 1501(Pt-1) ISO 6507-1 ASTM E92
Brinell Hardness Test	IS 1500(Pt-1) ISO 6506-1 ASTM E 10 ASTM 370
Portable Hardness Test	ASTM E 110



## Welding Qualification Testing as per ASME, AWS, and ISO standards.



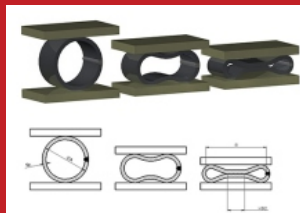
## Flaring Test

Used to assess a tube's ability to expand without cracking.



## Flattening Test

Checks the ductility and strength of pipes by compressing them between two plates.



## Fracture Test

Determines a material's behavior and resistance when subjected to breaking force



## Metallography test

Metallography involves examining the microstructure of metals and alloys, typically using microscopic techniques. This analysis is vital for understanding material properties such as grain size, crystal structure, and identifying defects like cracks or non-metallic inclusions. Metallography is a key tool in industries such as aerospace, automotive, and general manufacturing.



Specific Test Performed	Test Method	
Micro structure Macrostructure Graphite in cast iron (nodular cast iron, grey cast iron & malleable cast iron) Grain size (by ASTM chart comparison method) Decarburization Depth Inclusion Rating	IS 7754 IS 11371, IS 4163 IS 4748, IS 6396 ISO 945-1, ISO 4967 ISO 17639, ISO 3887 ISO 17781 ASTM A 247, ASTM A 923 ASTM E 112, ASTM E 562	ASTM E1077 ASTM E 381, ASTM E45 ASME – SEC IX ASM METAL HAND BOOK Vol.9 AWS D1.1/D1.1M AWS D1.6/D1.6M

## Corrosion test

Corrosion testing determines a material's susceptibility to corrosion. These tests help evaluate a material's resistance to specific types of corrosion, including pitting and intergranular corrosion.

Specific Test Performed	Test Method
Intergranular corrosion test (IGC)	ISO 3651 Method A, B & C ASTM A 262 Practice A, B, C & E
Pitting Corrosion	ASTM G48 Method A ASTM G28 Method A ASTM A 923 Method C



## Chemical Testing

Materials tested include:

- Plain carbon and low-alloy steels
- Stainless steels and high chromium/nickel steels
- Tool steels
- Maraging steels
- Cast irons and SG iron
- Ni-Hard and Ni-Resist alloys
- Nickel-based alloys such as Monel, Inconel, and Hastelloy



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